

**REMARKS**

Reconsideration of the application identified in caption, pursuant to and consistent with 37 C.F.R. §1.111 and in light of the remarks which follow, is respectfully requested.

At the outset, Applicants note with appreciation the indication that claim 14 is allowed, and that claim 23 would be allowable if rewritten in independent form including all of the features of the base claim and any intervening claims. See Official Action at page 6.

In the Official Action, claim 18 stands rejected under 35 U.S.C. §112, second paragraph, as being indefinite. Withdrawal of this rejection is respectfully requested for at least the following reasons.

Applicants submit that the recitations that the polyvalent metal compound is in the form of a slurry or a powder, and a polyvalent metal compound concentration of not less than 50 wt. %, are not inconsistent. In the case the polyvalent metal compound is in the form of a slurry containing the polyvalent metal compound, the polyvalent metal compound constitutes not less than 50 wt. % of the slurry; and in the case the polyvalent metal compound is in the form of a powder containing the polyvalent metal compound, the polyvalent metal compound constitutes not less than 50 wt. % of the powder. Accordingly, the meaning of claim 18 is not unclear, and withdrawal of the §112, second paragraph, rejection is respectfully requested.

Claims 1-7, 9, 15-22 and 24 stand rejected under 35 U.S.C. §103(a) as being obvious over U.S. Patent Application Publication No. 2003/0020199 (*Kajikawa et al.*). Claims 1-7, 9, 11-13, 15-22 and 24 stand rejected under 35 U.S.C. §103(a) as being obvious over *Kajikawa et al* in view of Japanese Patent Document No. JP 02-178332

(*Hayashi et al.*). Withdrawal of these rejections is respectfully requested for at least the following reasons.

Independent claims 1 and 2 recite a particulate water retaining material for cultivating plant. Independent claims 17-19 recite a method for the production of a water retaining material for cultivating plant.

*Kajikawa et al* does not disclose or suggest each feature recited in the independent claims. For example, *Kajikawa et al* does not disclose or suggest that an amount of a monovalent counterion of the carboxylic group-containing water-insoluble absorbent resin is in a range of 10 to 65 mol%, as recited in claims 1, 2 and 17-19. In addition, *Kajikawa et al* does not disclose or suggest that the solubility of (B) said polyvalent metal compound in 100 g of deionized water at 20°C is more than 0 and not more than 10.0 g, as recited in claims 1, 2 and 17-19. Further, *Kajikawa et al* does not disclose or suggest a material which exhibits an absorption capacity in deionized water for 10 minutes in the range of 20 - 500 g/g, as recited in claim 1, or a material which exhibits a calcium gradual release index of more than 0 and not more than 50 mg/L, as recited in claim 2. The Patent Office has acknowledged that *Kajikawa et al* does not disclose the above claimed subject matter, and has alleged that such subject matter would have been obvious in view of *Kajikawa et al*. Applicants respectfully but strenuously disagree with the Patent Office's assertions for at least the following reasons.

Concerning the recited solubility of (B) said polyvalent metal compound, the Patent Office has noted that Applicants' disclosure mentions the use of silicon oxide, and *Kajikawa et al* also discloses the use of silicon oxide. However, *Kajikawa et al* discloses that the silicon oxide constitutes **insoluble** fine particles for surface coating. Clearly, the solubility of the silicon oxide disclosed by *Kajikawa et al* is not more than 0.

By comparison, the recited polyvalent metal compound has a solubility of more than 0, and the instant specification discloses that "[t]he polyvalent metal compound which is insoluble in water is not favorable because the plant cannot utilize the inorganic element." See specification at page 27, lines 19 to 22.

Applicants note that in light of the recitation that the solubility of (B) said polyvalent metal compound in 100 g of deionized water at 20°C is more than 0, it is apparent that the use of silicon oxide mentioned in the specification is permissible, for example, as long as such claimed solubility characteristic is satisfied. Thus, for example, the silicon oxide can be used together with a calcium compound such that the polyvalent metal compound as a whole exhibits the claimed solubility characteristics. Put differently, the recitation that the solubility of (B) said polyvalent metal compound in 100 g of deionized water at 20°C is more than 0, excludes an embodiment where the polyvalent metal compound is solely insoluble silicon oxide, i.e., that which is disclosed by *Kajikawa et al.*

Furthermore, with regard to the claimed amount of a monovalent counterion of the carboxylic group-containing water-insoluble absorbent resin, the Patent Office has relied on *Kajikawa et al* for disclosing a range of 30 to 100 mol%. *Kajikawa et al*, however, has no recognition or suggestion of the exemplary advantages attainable by employing the claimed range. For example, the instant specification discloses that "[i]f the amount of the monovalent counterion of the carboxyl group possessed by the water absorbent resin (A) falls short of 5 mol%..., the shortage will be at a disadvantage in possibly degrading the water absorption properties such as, for example, the saturated absorption capacity and the water absorption speed, of the plant growth...water retaining material. If the amount of the monovalent counterion exceeds 75 mol%..., the overage will be at a disadvantage in possibly inducing inhibition of the growth of the

plant because of the addition to the absorbing capacity of the carboxyl group-containing water absorbent resin itself manifested for such useful nutrient salts for plant as magnesium, calcium, and zinc." See specification at page 13, line 26 to page 14, line 6. Such advantageous effects can be seen, for example, in the examples set forth in the instant specification. *Kajikawa et al* has no recognition or suggestion of the surprising and unexpected results attainable by employing the claimed amount of a monovalent counterion of the carboxylic group-containing water-insoluble absorbent resin.

Concerning the claimed absorption capacity and calcium gradual release index, the Patent Office has alleged that such characteristics would be inherent in the *Kajikawa et al* material "given that the claimed compositional requirements are obviated by the prior art". See Official Action at page 4. However, for the reasons discussed above, substantial differences exists between the claimed materials and methods and *Kajikawa et al*. Thus, the Patent Office's reliance on inherency is untenable. In addition, exemplary production methods disclosed in the present specification differ from those contemplated by *Kajikawa et al*. For example, in an exemplary production method, a base polymer is first obtained by conducting polymerization of monomer components, drying, pulverization, and classification, and then the base polymer is mixed with a polyvalent metal compound to obtain a water retaining material for plant growth. By comparison, *Kajikawa et al* produces a water absorbent resin by carrying out surface cross-linking of the obtained base polymer. Clearly, it is far from certain that the *Kajikawa et al* material possesses the claimed characteristics.

*Hayashi et al* fails to cure the above-described deficiencies of *Kajikawa et al*. In this regard, the Patent Office has relied on *Hayashi et al* for the reasons set forth at pages 5-6 of the Official Action. Even if *Hayashi et al* would have been combined with

*Kajikawa et al* in the manner suggested by the Patent Office, the resulting combination nevertheless fails to disclose or suggest the claimed features discussed above.

For at least the above reasons, it is apparent that the claims are non-obvious over the applied documents. Accordingly, withdrawal of the above §103(a) rejections is respectfully requested.

The dependent claims are allowable at least by virtue of their direct or indirect dependence from one of the independent claims. Thus, a detailed discussion of the additional distinguishing features recited in the dependent claims is not set forth at this time.

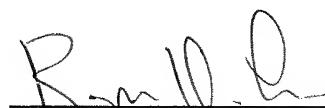
From the foregoing, further and favorable action in the form of a Notice of Allowance is believed to be next in order, and such action is earnestly solicited. If there are any questions concerning this paper or the application in general, the Examiner is invited to telephone the undersigned.

Respectfully submitted,

BUCHANAN INGERSOLL & ROONEY PC

Date: August 17, 2011

By:



Roger H. Lee  
Registration No. 46317

**Customer No. 21839**  
703 836 6620